We claim:

1.   A simulation method for a data record (2, 4, 6, 15) which describes three-dimensional processing by a CNC-controlled processing machine (3), in particular a milling machine (3),

-       a desired processing by an initial data record (2) which describes idealized processing instructions for the processing machine (3) being determined,

-       it being possible to determine from the initial data record (2) with the aid of an arithmetic unit (1) a control data record (4) for a control unit (10) controlling the processing machine (3), and

-       it being possible to determine at least one two-dimensional projection of the processing from the initial data record (2) and/or from the control data record (4), and to represent it via a display device (17).

2.   The simulation method as claimed in claim 1, wherein it is possible with the aid of the arithmetic unit (1) to determine at least one intermediate data record (6) from the initial data record (2) and then to determine the control data record (4) from the intermediate data record (6), and wherein it is also possible to determine from the intermediate data record (6) at least one two-dimensional projection of the processing and to represent it via the display device (17).

3.   The simulation method as claimed in claim 2,

-       wherein the initial data set (2) is a part program (2),

-       wherein the part program (2) can be assigned traversing speeds (v), traversing accelerations (a) and track curvatures,

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- wherein the part program (2) and the traversing speeds (v), traversing accelerations (a) and track curvatures which can be assigned thereto are used to determine movements to be coordinated with one another – if appropriate, in two stages - of individual traversing options of the processing tool (7), the

5   movements to be coordinated with one another forming the control data record (4), and

- wherein the intermediate data record corresponds to the part program (2) with the traversing speeds (v), traversing accelerations (a) and track curvatures assigned to it.

10   4.   The simulation method as claimed in claim 2,

- wherein the initial data set (2) is a part program (2),

- wherein the part program (2) can be transformed into a polynomial series (6),

- wherein the polynomial series (6) can be assigned traversing speeds (v), traversing accelerations (a) and track curvatures,

15   - wherein the polynomial series (6) and the traversing speeds (v), traversing accelerations (a) and track curvatures which can be assigned thereto are used to determine movements to be coordinated with one another of individual traversing options of the processing tool (7), the movements to be coordinated with one another forming the control data record (4), and

- wherein the intermediate data record (6) corresponds to the polynomial series (6) with or without the traversing speeds (v), traversing accelerations (a) and track curvatures assigned to the polynomial series (6).

5. The simulation method as claimed in one of the above claims, wherein a final data record (15) describing the actual processing can be determined by computation from the control data record (4) with the aid of a model (M) describing a real response of the processing machine (3), and wherein it is also possible to determine from the final data record (15) at least one two-dimensional projection of the actual processing and to represent it via the display device (17).

6. The simulation method as claimed in claim 5, wherein the response of the processing machine (3) is described by machine parameters (E, d).

7. The simulation method as claimed in claim 6, wherein the machine parameters (E, d) can be changed interactively at least partially.

8. The simulation method as claimed in claim 5, 6 or 7, wherein the machine parameters (E, d) comprise at least one dimension (d) of a processing tool (7) of the processing machine (3).

9. The simulation method as claimed in one of the above claims, wherein it is possible to select - preferably interactively - which of the data records (2, 4, 6, 15) is used to determine the at least one two-dimensional projection and the representation thereof via the display device (17).

10.   The simulation method as claimed in claim 9, wherein a multiplicity of interpolation points which in their entirety describe the processing are determined with the aid of the selected data record (2, 4, 6, 15).

11.   The simulation method as claimed in claim 9 or 10, wherein the selected data record (2, 4, 6, 15) can be changed interactively.

12.   A computer program product for carrying out a simulation method as claimed in one of the above claims.

13.   A simulation and/or emulation computer programmed with the aid of a computer program product as claimed in claim 12.